

REMARKS

The Office Action of July 8, 1998 has been fully considered by the Applicant. In view of the following comments, reconsideration of the application is respectfully requested.

The Office Action

Claims 1-6 stand rejected under 35 USC § 103(a) as being unpatentable over Proudfit (US 5,314,187).

Claims 1-6 stand provisionally rejected under the judicially created doctrine of double patenting over claims 1-8 of copending application No. 08/920,070.

Claims 1-6 stand provisionally rejected under the judicially created doctrine of double patenting over claims 1-8 of copending application No. 08/926,246.

Provisional Double Patenting Rejections

Claims 1-6 have been provisionally rejected over claims 1-8 of copending US Application No. 08/920,070 and claims 1-8 of copending US Application No. 08/926,246.

Applicants are of the opinion that the instant application's claims are not exactly the same as the claims of each of 08/920,070 and 08/926,246. However, upon indication of allowable subject matter, applicants will provide a Terminal Disclaimer, if required and appropriate, to overcome the double patenting rejections.

At this time applicant believes no Terminal Disclaimer is necessary as no allowable subject matter has been indicated in this or the copending applications.

Rejection Under 35 USC § 103

Claims 1-6 have been rejected under 35 USC § 103(a) as being unpatentable over Proudfit. Specifically, the Examiner states in the Office Action at page 2:

"Proudfit discloses the claimed invention with the exception of the particular Shore D hardness claimed. However, Proudfit discloses a hard inner cover and softer outer cover formed from materials such as those disclosed by the applicant. Obviously the exact hardness of the layers would have been up to the ordinarily skilled artisan depending on distance and feel considerations. Absent a showing of unexpected results, the particular parameters of Proudfit's ball, which is formed from the same materials in the same fashion claimed by applicant, would have been obvious to one of ordinary skill in the art."

Applicants are of the opinion that the Examiner has not addressed or has misinterpreted material limitations present in the claims. Specifically, with respect to the type of material used in the outer cover, the Examiner has failed to provide a teaching of the use of the particular comparatively softer non-ionomeric thermoplastic or thermosetting elastomers (claim 1) such as polyurethane (claim 5) or, polyesters, polyester elastomers, polyether polyurethane and polyester amides (claim 6).

The Present Invention

The invention of this application (claims 1-6) is directed to improved multi-layer golf ball cover compositions and the resulting multi-layer golf balls produced thereby. The novel multi-layer golf balls of the invention include a first or inner layer or ply of a low acid (16 weight percent acid or less) ionomer or ionomer blend. A second or outer layer or ply is included in the multi-layered golf balls comprised of a comparatively softer, non-ionomeric thermoplastic or thermosetting elastomer such as polyurethane, a polyester elastomer or a polyesteramide. Preferably, the inner layer or ply includes a blend of low acid ionomers and has a Shore D hardness of 60 or more and the outer cover layer comprises a polyurethane and has a Shore D hardness of about 45. The multi-layer golf balls of the invention can be of standard or enlarged size.

It has been found that multi-layer golf balls having inner and outer cover layers exhibit higher C.O.R. values and have greater travel

distance in comparison with balls made from a single cover layer. In addition, it has been found that use of an inner cover layer constructed of a blend of low acid (i.e., 16 weight percent acid or less) ionomer resins produces softer compression and higher spin rates than inner cover layers constructed of high acid ionomer resins. Furthermore, it has been discovered that use of a softer polyurethane outer layer adds to the desirable "feel" and high spin rate while maintaining respectable resiliency. The soft outer layer allows the cover to deform more during impact and increases the area of contact between the club face and the cover, thereby imparting more spin on the ball. **As a result, the soft polyurethane cover provides the ball with a balata-like feel and playability characteristics with improved distance and durability.**

Consequently, the overall combination of the inner low acid ionomer resin cover layer and the outer cover layer made from polyurethane elastomers and non-ionomeric resins results in a standard size or oversized golf ball having *enhanced resiliency* (improved travel distance) and *durability* (i.e. cut resistance, etc.) characteristics while maintaining and in many instances, improving the balls playability properties. Specifically, it has been found that the combination of a low acid ionomer blend inner cover layer with a soft, relatively low modulus ionomer, polyurethane based elastomer outer cover layer provides for good overall coefficient of restitution (i.e., enhanced resiliency) while at the same time demonstrating improved compression and spin. The outer cover layer generally contributes to a more desirable feel and spin, particularly at lower swing speeds with highly lofted clubs such as half wedge shots.

The Prior Art

Proudfit teaches a two layer cover for a golf ball. The two layer cover comprises an inner layer which is molded over a solid or wound core and an outer layer which is molded over the inner layer. The inner layer is formed from a relatively hard, cut-resistant material such as ionomer resin, and the outer layer is formed from relatively soft material such as elastomeric or polymeric material selected from the class consisting of natural balata,

synthetic balata, natural rubber, polybutadiene, and polyoctenylene rubber.

**The Claimed Invention Distinguishes Patentability
and Unobviously Over the Cited Art**

The present invention, as claimed, requires an outer cover which is comprised of a relatively soft (compared to the inner cover) polymeric material selected from non-ionomeric thermoplastic and thermosetting elastomers (claim 1) polyurethane elastomer (claim 5) or polyester elastomers, polyesters, polyester polyurethane or polyester amides (claim 6).

Applicant respectfully submits that Proudfit fails to teach or suggest the claim designated outer cover compositions of the present invention.

Specifically, Proudfit, while disclosing a two layer cover comprising a relatively hard inner cover and relatively softer outer cover, fails to recognize the undesirable properties of a balata containing outer cover. As specifically set forth in the specification at page 2 of the specification:

"Despite all the benefits of balata, balata covered golf balls are easily cut and/or damaged if mis-hit. Golf balls produced with balata or balata-containing cover compositions therefore have a relatively short lifespan."

The present invention, utilizes the claim designated multi-layer cover which has an outer cover comprising non-ionomeric thermoplastic and thermosetting elastomers, such as polyurethane elastomers. Thus the present invention avoids the cut and abrasion propensities of balata while retaining the spin and feel characteristics of balata through the use of the claimed multi-layer structure.

As can be seen in Table 9 of the instant application (page 46), spin rates of the golf balls according to the present invention having softer polyurethane elastomer outer covers and harder inner covers (ball No.'s 23-25) are as high as, if not better than, comparable golf balls having z-balata covers and the same harder inner covers. However, as can be seen from Table 9, scuff resistance is greater for the golf balls according to the present invention (scuff values of 1.5 for balls 23-25) compared to the Z-balata

covered balls which have scuff values of 3 (for samples 27-29). This advantage is not taught nor suggested by the prior art.

In summary, the present invention relates to a multi-layer golf ball which has a hard, low acid, inner layer and a relatively soft, non-ionomeric elastomer such as a polyurethane, a polyester elastomer or by a polyester amide outer layer. As more particularly indicated in Example 4, use of non-ionomeric elastomers (Formulations 23-25) to produce the outer cover layer, results in molded golf balls having softer compression, improved durability, higher spin, with similar COR values to that of balata covered golf balls. The data indicates that a very good multi-layer ball having enhanced durability can be made using non-ionomeric elastomers (i.e., polyurethane, etc.) as the material for the outer cover layers.

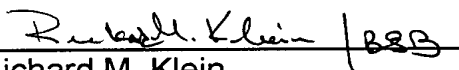
Consequently, the applicant respectfully submits that the golf balls according to the claimed invention are not obvious variants of the Proudfit balls as Proudfit does not recognize or provide motivation for the unexpected enhanced durability of the claimed balls while retaining desirable balata-like properties.

Conclusion

In view of the above comments, it is believed that this application is in condition for allowance. Therefore, the Applicant respectfully requests favorable reconsideration and allowance of this application.

Respectfully submitted,

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